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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,304	03/22/2000	Yoshihiko Hirota	325772015800	8667

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EXAMINER	
ROGERS, SCOTT A	
ART UNIT	**PAPER NUMBER**
2626	

DATE MAILED: 12/31/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/532,304	HIROTA ET AL.	
	Examiner	Art Unit	
	Scott A Rogers	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,6,8 and 9* is/are rejected.

7)☒ Claim(s) *2-4 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Arguments

Applicant's arguments filed 07 October 2003 have been fully considered but they are not persuasive. Applicant argues that Shiau et al are directed only to perturbing the threshold in areas where the occurrence of periodically repeating patterns are distracting, adding random noise after modifying an video or image signal by error diffusion process, or adding random noise to the threshold/signal relationship which applicant links to applying random noise to the threshold level referred to earlier in the Shiau et al reference. The examiner disagrees with the later interpretation of Shiau et al. In column 6, lines 7-19, Shiau et al clearly state on lines 12-13 that "random noise is added to the video signal". It is this noise added to or superimposed on the video signal prior to quantization (thresholding) that "perturbs the threshold/image signal relationship". The conclusion that noise is somehow added to the relationship as referred to by applicant is non sequitur.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiau et al (US 5880857).

Shiau et al disclose in the background art discussion, a known image processing unit and method in which input pixel data is successively quantized based on output values distributed at predetermined tone differences, an error of quantization of the pixel data is detected, the detected error of quantization of the pixel data with respect to an error of quantization of peripheral pixel data is integrated, and the integration error is feedback and added to pixel data input next (see col. 1, lines 26-53)

Shiau et al disclose the improvement of generating random noise in accordance with a tone level of the input pixel data and superimposing the generated random noise on the pixel data before the pixel data is quantized (see col. 3, line 57 to col. 4, line 17, and col. 6, lines 7-19).

Shiau et al disclose in the case of successive input of pixel data that comprise a plurality of color data necessary for color reproduction, and said random noise is generated for each color (see col. 9, lines 29-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiau et al as applied to claim 1 above, and further in view of Tanioka et al (US 5153925).

Shiau et al do not disclose a simple quantizing unit that quantizes pixel data on which the random noise is not superimposed and a selector that selects either one of multilevel error diffusion processed pixel data and simple quantized pixel data in accordance with an attribute of the pixel data such as a character edge, and outputs the selected data as tone reproduction data.

However, Tanioka et al teach a simple quantizing unit 201 that quantizes pixel data and a selector 202 that selects either one of multilevel error diffusion processed pixel data (from 200b) and simple quantized pixel data (from 201) in accordance with an attribute of the pixel data such as a character edge, and outputs the selected data as tone reproduction data (col. 3, lines 15-38).

It would have been obvious to one of ordinary skill in the art to have modified the image processing unit Shiau et al, in view of the suggestion in Tanioka et al, to have included a simple quantizing unit that quantizes pixel data on which the random noise is not superimposed and a selector that selects either one of multilevel error diffusion processed pixel data and simple quantized pixel data in accordance with an attribute of the pixel data such as a character edge, and outputs the selected data as tone reproduction data. The motivation for such modification in view of Tanioka et al, would have been to obtain a high grade halftone or character image reproduction by selecting a fixed thresholding (simple quantizing) output in accordance with the presence of an edge in the input data (col. 2, lines 3-15).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiau et al as applied to claim 1 above, and further in view of well known prior art (MPEP 2144.03).

Shiau et al do not disclose implementation of their method using a computer program to controlling an image processor.

Computer programs for controlling image processors are notoriously old and well known in the prior art.

It would have been obvious to one of ordinary skill in the art to have modified the image processing unit Shiau et al, in view of the well known prior art to have implemented of their method using a computer program to control an image processor in order to have obtained the well known advantages of a programmable processor (e.g., wider and lower cost application, improved ability and reduced cost to update, modify, and maintain, etc.).

Allowable Subject Matter

Claims 2-4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Drawings

New corrected drawings are required in this application because in Fig. 1 there should be an arrow form element 6 to element 7. Applicant is advised to employ the

services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Rogers by telephone at 703-305-4726 and by e-mail address at scott.rogers@uspto.gov.

The official fax number for Technology Center 2600 where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2600 Customer Service at 703-306-0377.

17 December 2003

SCOTT ROGERS
PRIMARY EXAMINER